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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/402,232

09/30/1999

RAINER ESKUCHEN

H-2849-PCT/U

5687

23657

7590

06/04/2004

COGNIS CORPORATION  
PATENT DEPARTMENT  
300 BROOKSIDE AVENUE  
AMBLER, PA 19002

EXAMINER

MAIER, LEIGH C

ART UNIT

PAPER NUMBER

1623

DATE MAILED: 06/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/402,232	<b>Applicant(s)</b> ESKUCHEN ET AL.	
	<b>Examiner</b> Leigh C. Maier	<b>Art Unit</b> 1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on 16 March 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 25-37 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 25-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Status of the Claims***

Claim 25 has been amended. Claims 25-37 are pending. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action. Any rejection or objection not expressly repeated has been withdrawn.

### ***Claim Rejections - 35 U.S.C. § 103***

Claims 25-32 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over LETTON (US 4,713,447).

The invention is as set forth in the previous Office action. The process has been amended, so that it is the acetalizing step (g), rather than the drying step (f), that is conducted over a temperature gradient of from about 70 to 120°C. Applicant's remarks, filed March 16, 2004, will be addressed insofar as they apply to the current rejection.

LETTON teaches the direct preparation of alkylglycosides, the process (See "Procedure" at col 5) comprising the homogenation of glucose and a fatty alcohol (C<sub>8</sub> to C<sub>30</sub> - see col 2, lines 28-38), followed by drying when a non-anhydrous glucose is used. The reference further teaches the use of glucose from a variety of sources. See col 2, lines 39-51. The molar ratios of glucose and alcohol are in the range of 1:1 to 1:7. See col 2, lines 60-64. The reference teaches the amount of acid catalyst in terms of moles/mole of glucose rather than wt%. See col 3, lines 51-56. However, the exemplified process uses 0.00315 mol of a "linear alkylbenzene sulfonate." See col 6, lines 9-25. For tetradecyl sulfonic acid, (see col 3, lines 30-39), this would be about 1g, or about 0.4% of the glucose/alcohol suspension.

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The reference is silent regarding the temperature at which the suspension is prepared. However, as discussed in the previous Office action, according to convention, when a temperature is not stated, it is assumed to be room temperature, which complies with the “preheating” limitation. Applicant is “at a loss in trying to understand how something at room temperature can be thought of as being preheated.” The examiner notes that claim 29 recites the alcohol is “preheated to a temperature of from 25 to 40°C.” Therefore, according to Applicant’s definition, a substance provided at room temperature (conventionally taken to be 25°C) qualifies as being “preheated.”

After drying, catalyst is added to the glucose/alcohol mixture. The mixture is then slowly heated to about 100°C and finally to 110°C. See steps 2 and 3 in the “Procedure.” The reference further teaches that the process is conducted at a temperature in the range of about 100°C to about 140°C under partial vacuum. See col 3, lines 51-66.

LETTON does not teach the use of a “supercooled” glucose syrup or “preheated” (above room temperature) fatty alcohol to prepare the glucose/alcohol mixture.

It would be obvious to one having ordinary skill in the art at the time the invention was made to use the reactants in the recited form. The artisan would be motivated to use glucose syrup in the form of an aqueous solution and a preheated alcohol to facilitate the mixing of the initial suspension. That is, mixing two liquids at elevated temperature would result in a more rapid mixing of all components than combining them, or a solid with a liquid, at a lower temperature. Applicant contends that this statement is merely “an opinion as to why the routineer may choose to [use an elevated temperature].” The examiner maintains the rationale is based on common knowledge in the art. See MPEP 2144.

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As noted above, the reference teaches that glucose may be used in any convenient form and that after mixing the glucose and the fatty alcohol, water is removed from the mixture, as required in the instant process. Therefore, in the absence of unexpected results, the form of the glucose in the initial mixture would not be considered inventive. Further, it would be within the scope of the artisan to optimize the amount of solids (glucose concentration) in the syrup.

LETTON does not explicitly exemplify the full range of the temperature gradient recited in the claims - the high temperature in the gradient is 110°C. However, as discussed above, the reference teaches a high temperature of acetalization of about 120°C. It would be within the scope of the artisan to optimize the high temperature through routine experimentation based on the teachings of the reference.

Claims 26, 29, and 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over LETTON (US 4,713,447) as applied to claims 25, 27, 28, 32, and 37 above, and further in view of GRUTZKE et al (US 5,648,475).

The invention is as set forth above. Dependent claims 33-36 further require carrying out the reaction discontinuously in one or more stirred tank reactors under reduced pressure.

LETTON teaches as set forth above. The reference does not teach the use of one or more tank reactors under the conditions set forth in claims 33-36.

GRUTZKE teaches as set forth in the previous Office action.

It would have been obvious to one having ordinary skill in the art to have performed the instant process in a cascade of stirred reactors. The artisan would be motivated to conduct the process in a series of reactors, as GRUTZKE had taught that a series of tank reactors has utility

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in this process. The series of reactors give the artisan the ability to fine-tune the conditions, such as pressure, necessary to optimize the process at every step. Applicant has not demonstrated that any criticality resides in these variables. Therefore, in the absence of unexpected results, it would be within the scope of the artisan to determine the optimum number of reactors and the optimum pressure at each reactor with routine experimentation. There does not appear to be a difference between the use of a "pressure gradient" and simply optimizing the reaction pressure at each stage of the reaction sequence. It would be obvious to perform the first step of the process (drying the suspension) in the first reactor, as this is the first step in the process.

Further regarding claims 26 and 29, although the examiner maintains that these limitations would be considered obvious over the teachings of LETTON alone, as set forth above, it is further noted that GRUTZKE teaches the use of an aqueous glucose syrup and preheating the fatty alcohol in the process of preparing alkyl glycosides. See col 2, lines 39-41 and paragraph bridging col 2-3. It would be within the scope of the artisan to take these measures as taught in the art and to optimize the glucose concentration and preheating temperature, respectively, with routine experimentation.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Examiner's hours, phone & fax numbers***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leigh Maier whose telephone number is (571) 272-0656. The examiner can normally be reached on Tuesday, Wednesday, or Friday 7:00 to 3:30 (ET).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. James O. Wilson (571) 272-0661, may be contacted. The fax number for Group 1600, Art Unit 1623 is (703) 872-9306.

Visit the U.S. PTO's site on the World Wide Web at <http://www.uspto.gov>. This site contains lots of valuable information including the latest PTO fees, downloadable forms, basic search capabilities and much more.

Leigh C. Maier  
Patent Examiner  
May 25, 2004

  
SAMUEL BARTS  
PRIMARY EXAMINER  
GROUP 1600